

Convert to Web Services

Last Modified on 07/26/2017 10:55 am CDT

You want to run TraCS as a web application so that your agency can skip the end-shifting process and so field units have in-car access to the master index and the full TraCS database.

Please note that the web services TraCS client does **NOT** run in a web browser. It is a full client installed in the mobile units, which uses web services over your VPN to process TraCS transactions. Under web services, the TraCS client can continue to function even when a broadband connection is not available; forms created on the field unit will automatically sync with the TraCS office database the next time the connection is available.

This FAQ assumes you are already using **WIPack151208 or newer** at your agency and are already using SQL Server for your TraCS databases. If your agency is not on the **“06” or newer baseline** or is not using SQL server for the TraCS databases, you will need to perform those upgrades first. The instructions below will walk you through setting up TraCS as a web application on your IIS server and configuring your field units to run in web services mode.

If you are installing TraCS 10 for the first time in your agency, disregard these instructions and follow the instructions in the [installation guide](#).

Requirements:

- Skills and knowledge related to web applications, including configuring IIS, firewall and proxy servers and VPNs.
- Operating System: Windows Server 2008 R2 x64 with IIS 7 or above, Windows Server 2012 R2 x64 with IIS 7 or above.
- .NET Framework: 2.0, 3.0, 3.5, and 4.0 (full installs).
- Processor: Quad Core, 2.0GHz or higher.
- Memory: 8 GB RAM or more.
- Hard Disk Drive Size: 100 GB or more with 50 GB free.
- Databases: SQL Server 2008 R2 x64 or higher.

- Servers set up as virtual machines are acceptable.
- Mobile units must have broadband access available most of the time.

Note: These instructions create a TraCS server at your agency. If you are upgrading from a standard network installation to a web services installation, please be aware that your TraCS server will also become your master computer for the purposes of installing WI Pack updates. Other administrative tasks that you formerly performed on the master computer may be done at another office workstation. We recommend you use the same office workstation for all administrative tasks.

For best success, please read all instructions before beginning.



Please note that the Badger TraCS Help Desk does not provide specific advice on configuring IIS, firewall and proxy servers, or VPNs. Your agency must be responsible for maintaining the required skill set. The help desk's knowledge is limited to the information presented here.

Is the server where your TraCS network folder is located the same server that you will use as your web server?

___ Yes, I'm keeping my existing server.

___ **New Server** No, I'm using a different server for IIS or I plan on changing the name of the network share.

1. Request an unlock key for TraCS Server from <mailto:badgertracs@dot.wi.gov>.
Please provide your agency name and TraCS serial number.
2. Download the server edition of TraCS:
<https://trust.dot.state.wi.us/tracs/software/tracsserver.zip>.
3. Extract the contents of the file to a folder of your choosing.

At your IIS server:

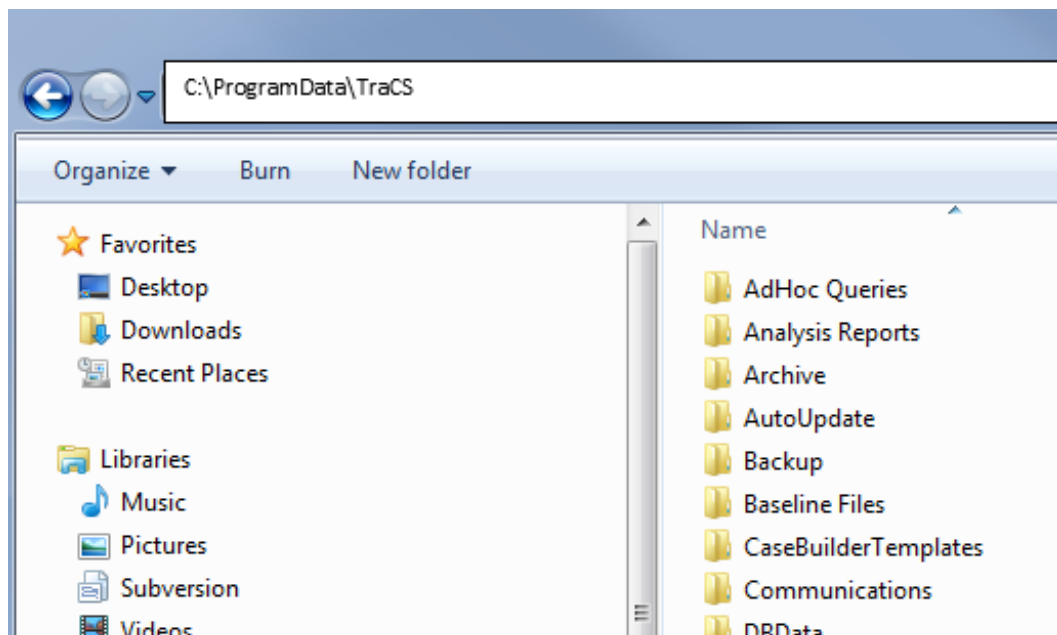
4. Install Windows Server 2008 R2 x64 Standard (or above.)
5. Install .NET Framework 3.5 SP1 and 4.0 (full versions.)
6. Stop IIS.
7. **New Server** If you are moving to a new server, copy the current TraCS 10 network directory to the IIS server.

- a. Write down the location of your old TraCS 10 network folder here:

_____ For
example, \\myOldFileServer\tracs10

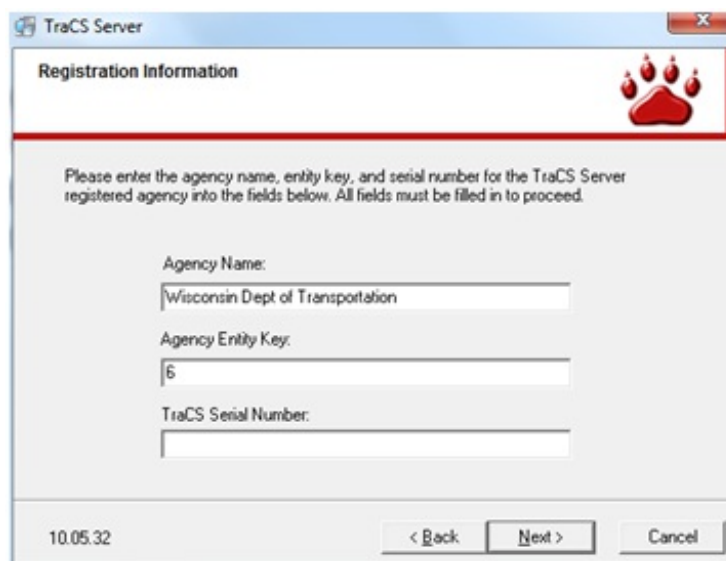
- b. On the IIS server, create a folder called **c:\programdata\tracs**.

- c. Copy the **contents** of your old TraCS 10 network folder to **c:\programdata\tracs**. The folder should look something like this when you are done:



- d. **Delete c:\programdata\tracs\Setting.ini** (If skipped, you will not be able to log into TraCS).
8. Run TraCS 10 - Server Install 10.xx.xx.EXE.
 - a. Click Next.
 - b. Click Next.

c. Enter registration information as per screenshot and click **Next**.



The screenshot shows the 'Registration Information' window of the TraCS Server. It contains three text input fields: 'Agency Name' with the value 'Wisconsin Dept of Transportation', 'Agency Entity Key' with the value '6', and 'TraCS Serial Number' which is empty. A red paw print icon is in the top right corner. At the bottom, there is a version number '10.05.32' and three buttons: '< Back', 'Next >', and 'Cancel'.

i. Wisconsin Dept of Transportation

ii. 6

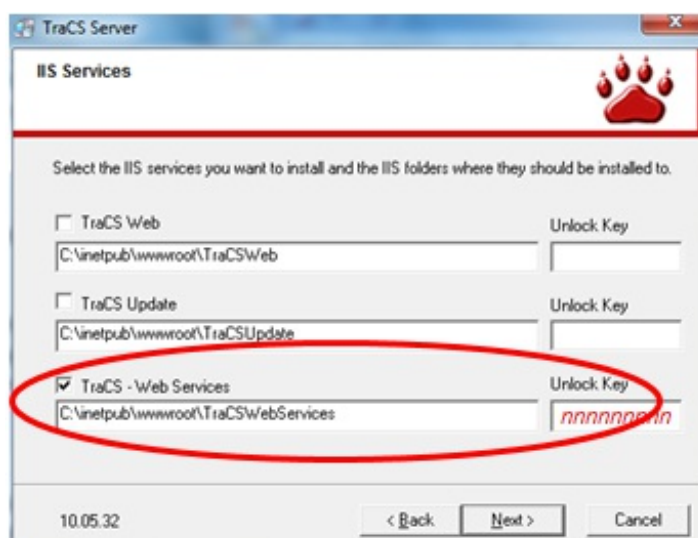
iii. Enter the serial number found on your welcome letter.

d. Choose **Full Install** and click **Next**.

e. Choose **Server** and click **Next**.

f. Enter the three-digit, all numeric, TraCS Machine ID number from your installation worksheet. Remember, **machine numbers must be unique throughout your agency**.

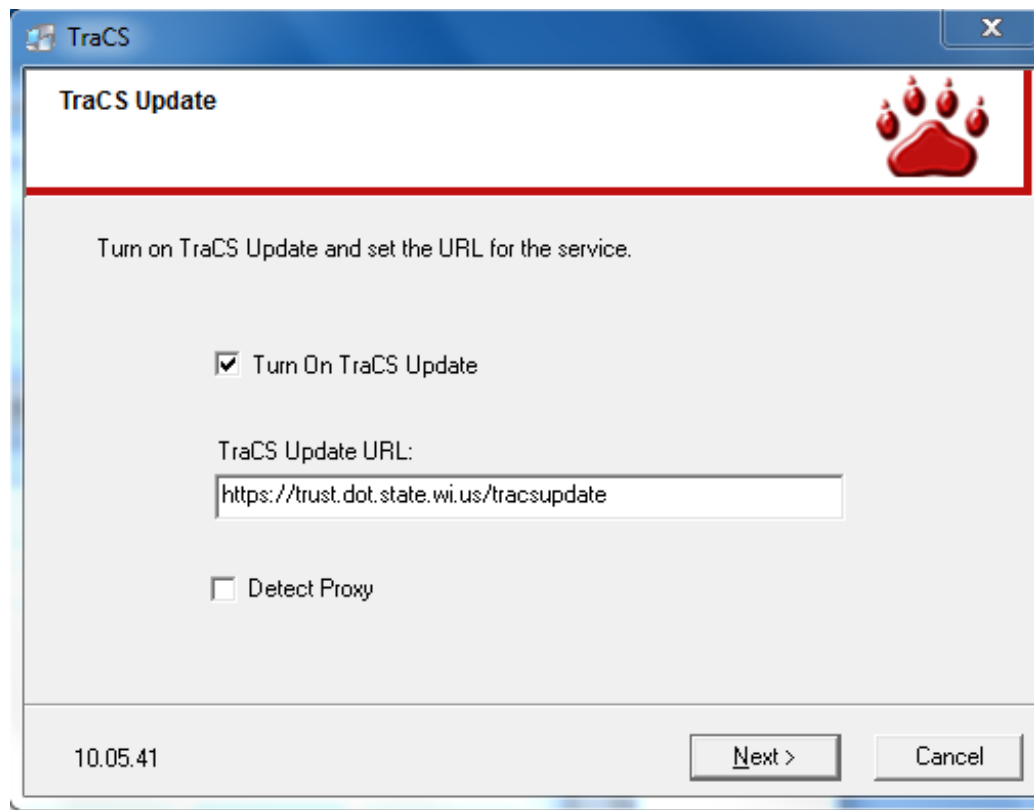
g. Click **Next**.



The screenshot shows the 'IIS Services' window of the TraCS Server. It lists three services with checkboxes and associated paths and unlock keys. The 'TraCS - Web Services' entry is selected with a red circle around it. The 'Unlock Key' for this service is 'nnnnnnnnnn'. The other two services, 'TraCS Web' and 'TraCS Update', are not selected. The bottom of the window shows the version '10.05.32' and buttons for '< Back', 'Next >', and 'Cancel'.

Service	Path	Unlock Key
<input type="checkbox"/> TraCS Web	C:\inetpub\wwwroot\TraCS\Web	
<input type="checkbox"/> TraCS Update	C:\inetpub\wwwroot\TraCS\Update	
<input checked="" type="checkbox"/> TraCS - Web Services	C:\inetpub\wwwroot\TraCS\WebServices	nnnnnnnnnn

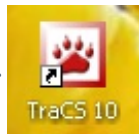
- h. Check the **TraCS – Web Services** box.
 - i. Enter the **Unlock key** provided to you by Badger TraCS.
 - ii. Change the **inetpub** address if required by your agency.
- i. Click **Next**.
- j. Click the radio button for “**Under the Windows Common Application Data Folder (Recommended)**” and click **Next** on the Application Data Location screen.
- k. Check the box for **Advanced Install** and click **Next**.
 - l. Install will run.
- m. Click **Next**.
- n. Configure URL for update service.



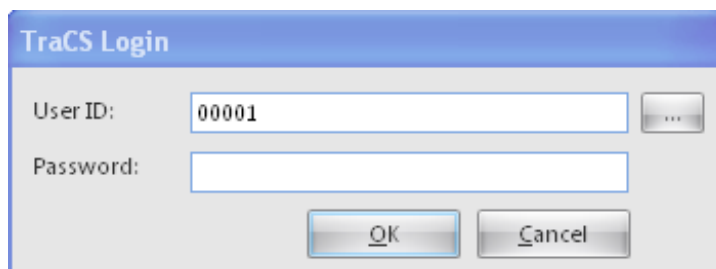
- i. Place a checkmark next to **Turn On TraCS Update**.
 - ii. Enter the URL for the TraCS Update Service:
<https://trust.dot.state.wi.us/tracsupdate>
- o. Click **Next**.
- p. Click **Finish**.

9. **New Server** If you are moving to a new server, register your master computer with Badger TraCS.

- a. Start TraCS 10.



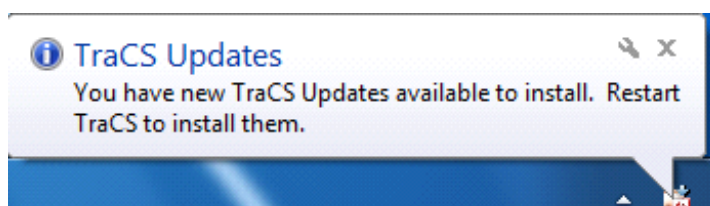
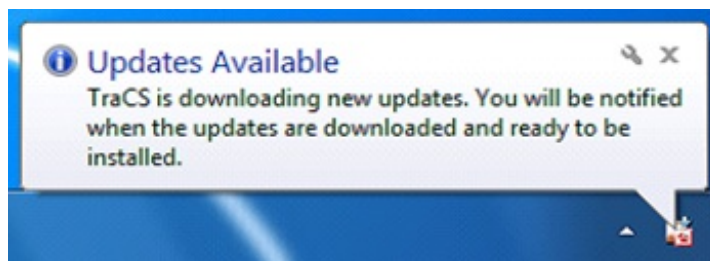
- b. TraCS will attempt to connect to the update server, but the update server does not yet know that your master computer should be authorized. When you get to the login screen, click **Cancel**.



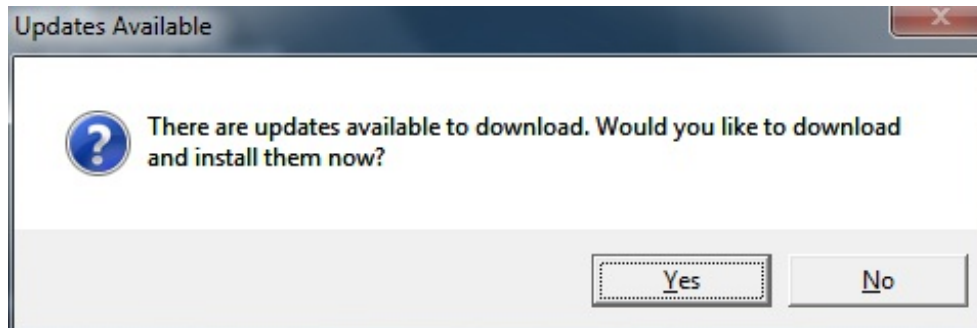
- c. Send an e-mail to badgertracs@dot.wi.gov requesting that your master computer be authorized. Please include the Windows machine name for your master computer and the name of your agency and mention that you are switching master computers because you are using web services.

10. Start TraCS 10.

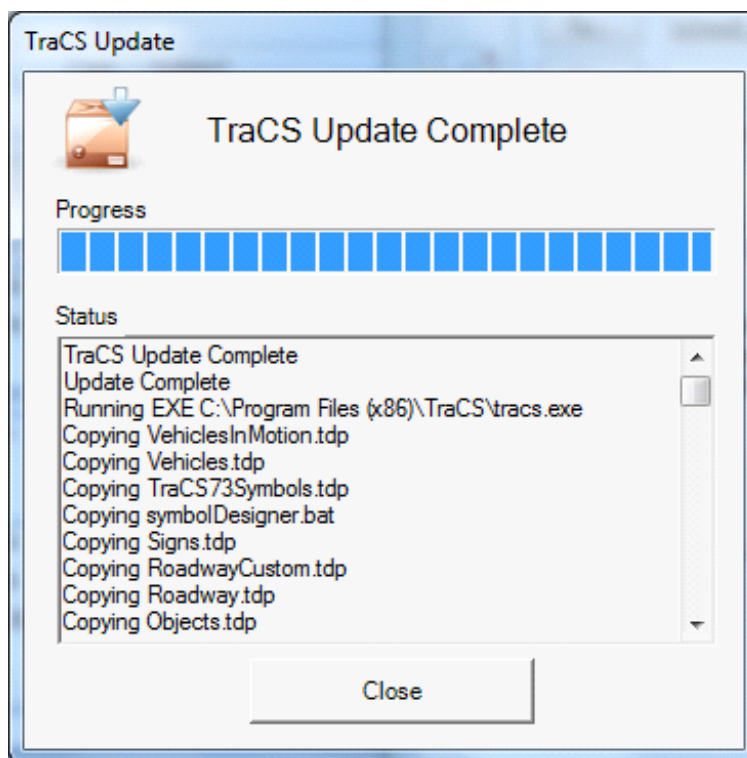
- a. You will receive notifications in your Windows task bar that files are downloading.



- b. When you receive the notification that the download is complete, exit TraCS by clicking the **Cancel** button on the log in screen. Then restart TraCS.
- c. Click Yes to download the update.



- d. Click **Close** once the TraCS update has completed.



- e. Close TraCS.

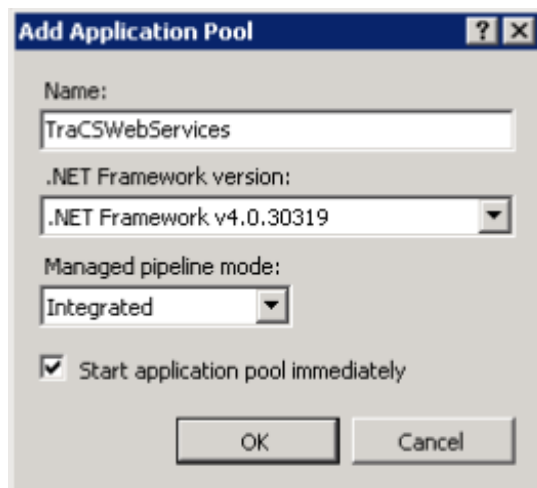
11. Configure IIS.

- a. Disable Windows firewall or make exceptions for the web server ports (80 or 443)
- b. Ensure the Web Server (IIS) role is activated on the server. IIS 7.0 is required.
- c. Ensure that ASP.NET and WCF are enabled.

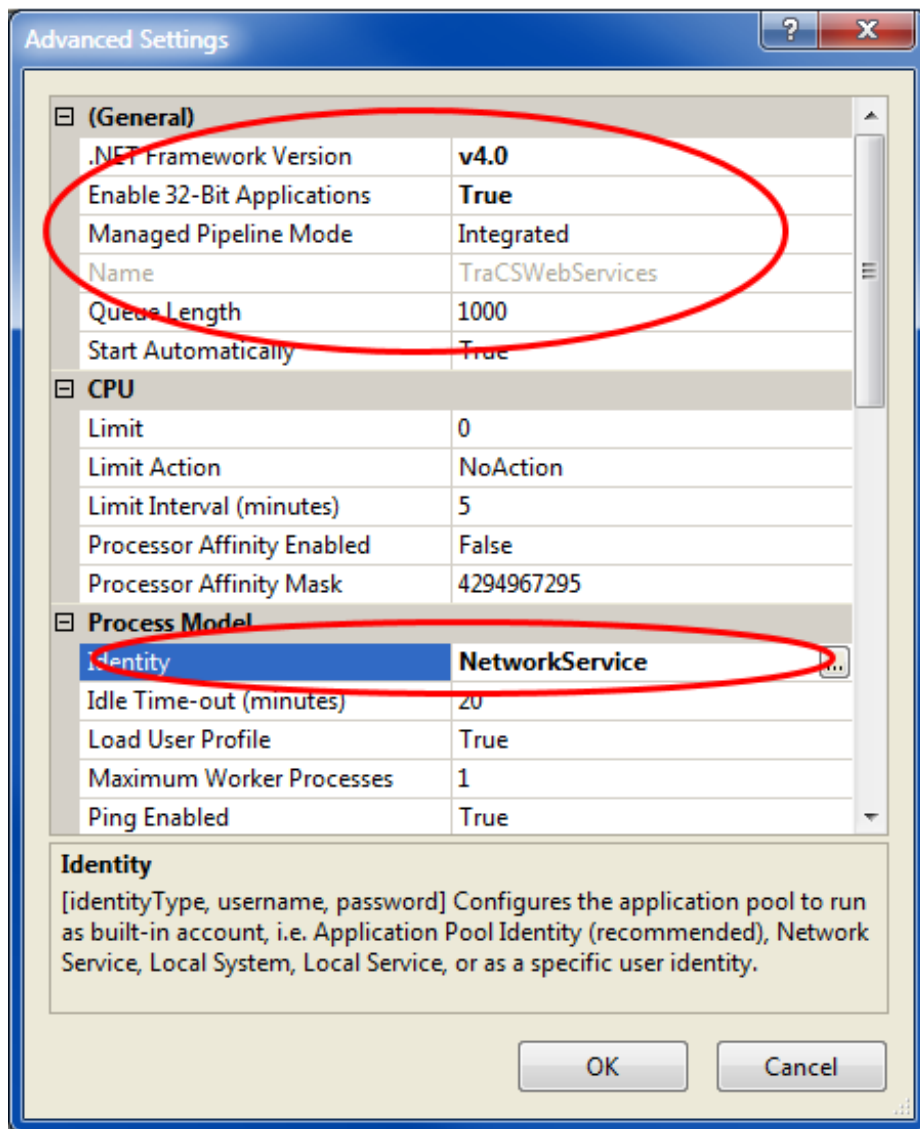
- i. Run **aspnet_regiis.exe -I** to install ASP.NET. (Located in C:\Windows\Microsoft.NET\Framework\v4.0.xxxxx). Run as admin.
- ii. Run **servicemodelreg.exe -la** to register WCF with IIS and ASP.NET. (Located in C:\Windows\Microsoft.NET\Framework\v4.0.xxxxx). Run as admin.

12. Configure TraCS Web Services.

- a. Add a new Application Pool in IIS Manager named: **TraCSWebServices**.



- b. In Advanced Settings for the TraCSWebServices application:



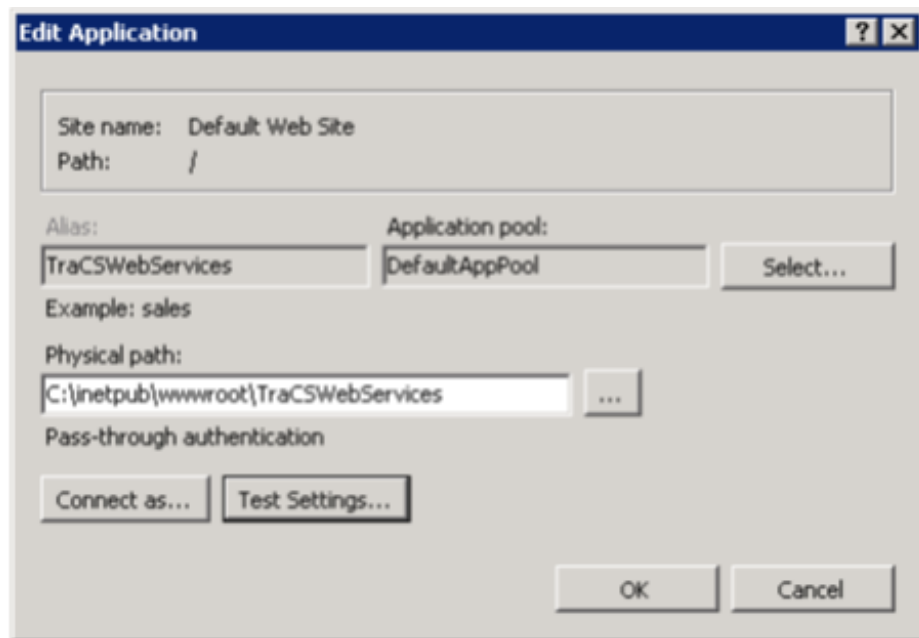
- i. Confirm the .Net Framework Version is v4.0 or better.
- ii. Enable 32 bit applications.
- iii. Enable Load User Profile.
- iv. Set the identity.
 - A. Use one of the Built-in accounts or use a Custom account. If using a custom account, make sure to use the domain name in front of the user name if necessary. Example: \username

Hey, wake up, B and C are super important! ↓

- B. Identity account must have access to the TraCS directories installed in task 1-2(c).
- C. Identity account must have access to the network share for the

SQL Server databases.

- c. Under Sites, convert TraCSWebServives to an application, choosing the **TraCSWebServices Application Pool**.



- d. Follow best practices to secure your web server. For example, only allow access to your VPN.
- e. If using SSL:
 - i. Install a certificate for SSL in IIS.
 - ii. Edit the bindings for the default web site in IIS to include https:// and specify that the certificate you installed in the previous step be used for this binding.
- f. Start the **TraCSWebServices** application pool.

*Note: You can test connectivity to the web application by pasting the web services URL in a web browser, for example, **http://mytracserver.com/TraCSWebServices**. You should see a response that “the web service is running.”*

- 13. **New Server** If you are moving to a new server, create a network share for **c:\programdata\tracs**.

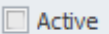
New Network share for TraCS:

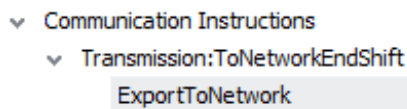
Example:

\\MyNewServer\sharename

- a. Any users using the Office version of TraCS will need Read, Write, Create and Delete access to this network share.
- b. Web services clients need read access to the distribution folder of this network share.


14. **New Server** If you are moving to a new server,

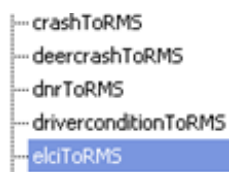
- a. Disable end-shift/startshift communications instructions by removing the active checkmark. 



- i. Transmission:ToNetworkEndShift (ExportToNetwork).
- ii. Transmission:ToNetworkStartShift (ExportToNetwork).
- iii. Transmission:FromNetworkStartShift (ImportToNetwork).
- iv. Transmission:FromNetworkEndShift (ImportToNetwork).

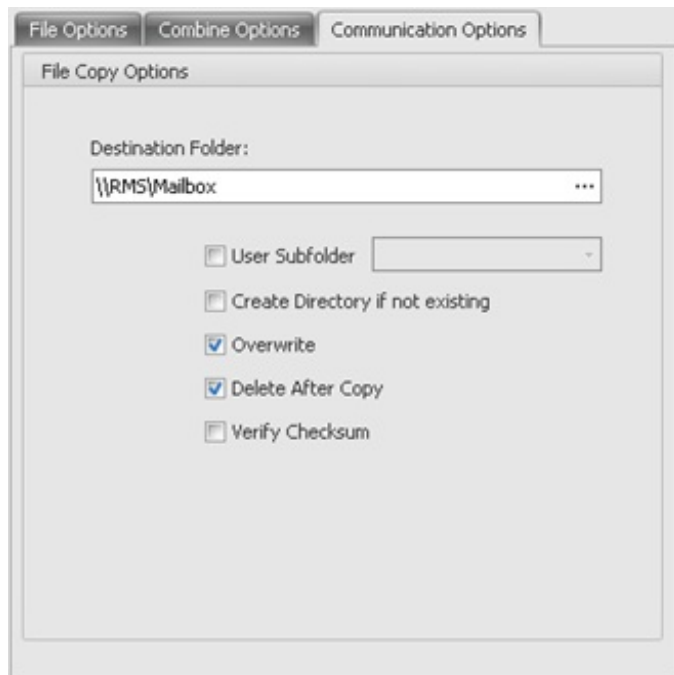
15. **New Server** If you are moving to a new server and your agency transmits data to your RMS, check your RMS transmission settings and if any, use the file copy method and specify the TraCS network folder, change them to reflect the new network folder. If you change the file destination, be sure that your RMS is configured to retrieve the data from the new location.

- a. Expand the **TransComm** item. 
- b. Select the “**ToRMS**” setting (for example: **elciToRMS**) for each form to be transmitted to your RMS.

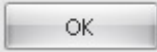


- c. Enter the location required by your RMS for the data files in the Destination

Folder if needed.



d. Repeat this for remaining forms that you want to transmit to your RMS.

16. **New Server** If you are moving to a new server, click **OK**  to close the communications editor and save your changes.
17. Perform [task 3-1](#) from the installation guide to update settings on your TraCS server. Web services settings are covered in step 8w.
18. Perform [task 4-1\(a\)](#) from the installation guide to create a new distribution file. Be sure to change your **Mobile Distribution Folder** and **Office Distribution Folder** locations if the share name for the TraCS network folder has changed.

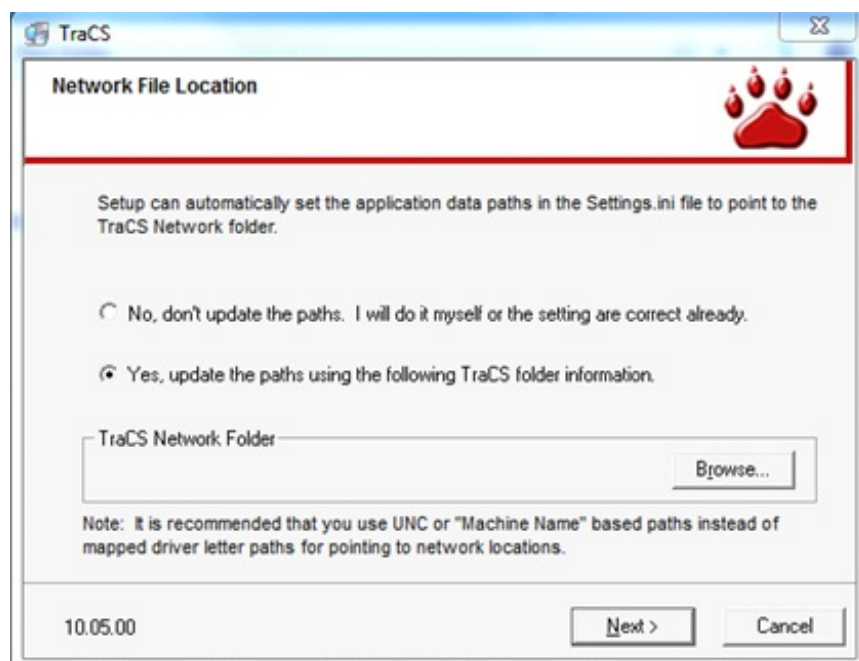
Mobile Distribution Folder \\myserver\tracs10\distribution\mobile\	Office Distribution Folder \\myserver\tracs10\distribution\office\
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19. **New Server** Configure workstations to point to the new network location.

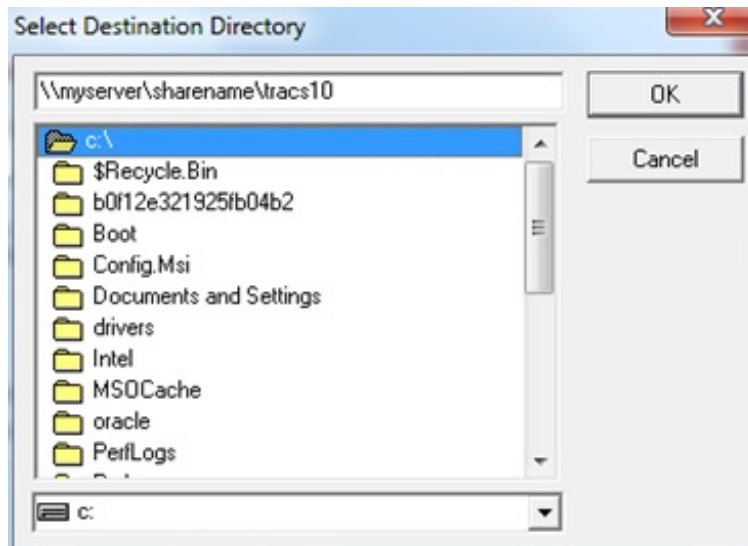
At each TraCS office workstation:

- a. Run **InstallTraCS.bat**, which can be found in the TraCS network folder inside the **Distribution** folder.
- b. Click **Next**.

- c. Click **Next**.
- d. Enter the requested registration information.
 - i. Enter your agency name spelled and capitalized as found on your welcome letter. (If you change the spelling of your agency, you will not be able to download software updates from Badger TraCS).
 - ii. Enter **6** in the entity key field.
 - iii. Enter the TraCS serial number found on your welcome letter.
 - iv. Click **Next**.
- e. Choose the **Client** radio button on the **Install Type** screen.
- f. Click **Next**.
- g. Enter the three-digit, all numeric, TraCS Machine ID number from your installation worksheet. Remember, **machine numbers must be unique throughout your agency**.
- h. Click **Next**.
 - i. Click **Next**.
 - j. Click **Next**.
- k. Click **Next**. The installation will start.
- l. On the **Network File Location** dialog, click **Browse**.

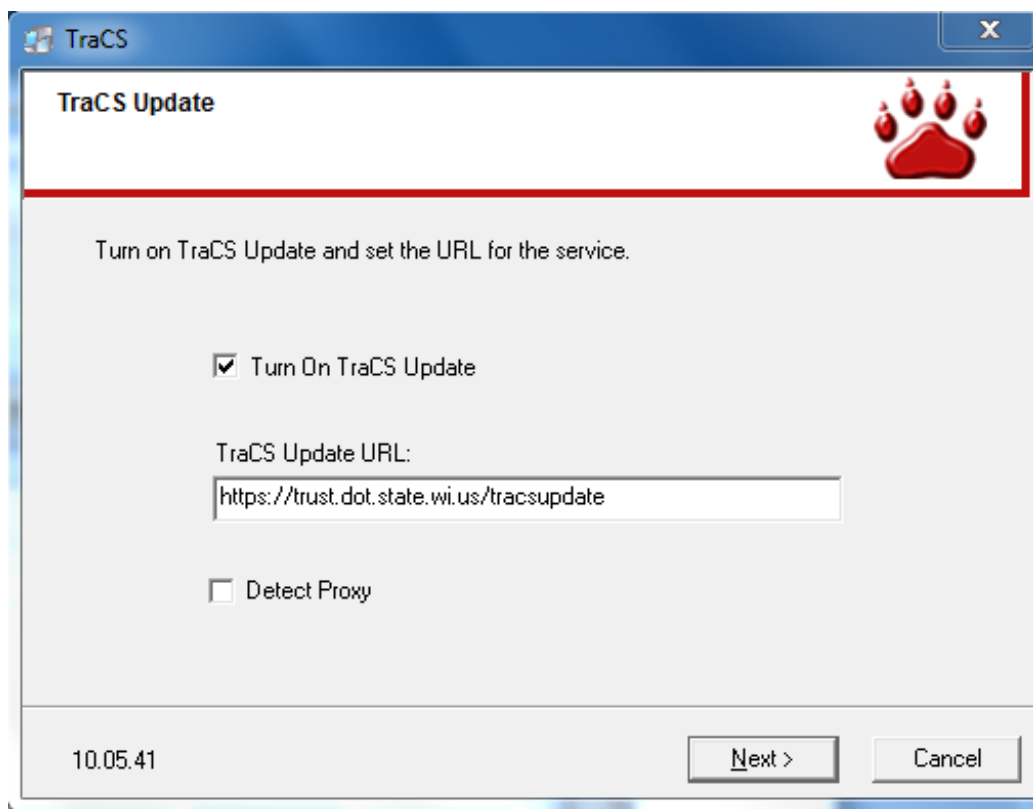


- i. Enter the UNC file path from step 13 above.



TraCS 10 Network Folder: _____

- m. Enable the update server.



- i. Place a checkmark next to **Turn On TraCS Update**.
- ii. Enter **https://trust.dot.state.wi.us/tracsupdate** in the **TraCS Update URL** field.

- n. Click **Next**.
- o. Click **Finish** on the final screen.

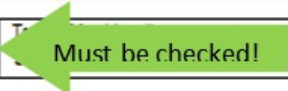
20. Configure field units to run in web services mode.

- a. If your agency auto-updates settings at log on for field units, update the configuration wizard form for each field unit to use web services. If you don't have a configuration wizard form for a field unit, follow step 20b instead.

At a TraCS office workstation:

- i. In the forms manager, select the the configuration wizard form for the field unit you want to convert to web services and open it for edit.

CONFIGURATION WIZARD

F01BAE0A4D864315D73D		TraCS Pack 10.06.06	TraCS Patch TEST	Create Date 02/25/2015
Settings				
<input checked="" type="checkbox"/> Auto-update Settings at Log On				Unique Machine ID F01BAE0A4D864315D73D
Windows Computer Name		Asset ID		
<input type="checkbox"/> Prompt New Folder	<input checked="" type="checkbox"/> Allow Multiple Instances Of TraCS	<input checked="" type="checkbox"/> Use RMS	<input checked="" type="checkbox"/> Enable WIBRS on NTC Form	
<input checked="" type="checkbox"/> Auto-Install ELCI Citation Numbers	Auto Install Quantity 200	TraCS Agency Number for Document Numbering 012		
<input checked="" type="checkbox"/> Use Initial for Officer First Name On Citations & Warnings				
External Search Message Cache Location c:\MessageCache		<input checked="" type="checkbox"/> Manual Message Cache Management		Message Cache Retention Period 1
<input type="checkbox"/> Use Proxy Server For Open Street Maps		Mapping Zone 16		
WISLR Map Location %ProgramData%\CTRE\Incident Location Tool\GISData				
Linked Attachment Location //myserver/tracs10/attachments				
Client Update URL https://trust.dot.state.wi.us/tracsupdate				
Client Update Location \TraCSClientUpdate\				
Resend Retention Period 30		Login Type TraCS		
Default Palette List for Diagram Tool Accident.tdg				
<input checked="" type="checkbox"/> Web Services Client	Web Services URL http://mytracsserver.com/TraCSWebServices		Web Transaction Time Out 30	

- ii. Change the **Web Services Client** field to **Yes**.
- iii. Change the **Web Services URL** field to the URL for the TraCSWebServices URL. For example:

<http://mytracsserver.com/TraCSWebServices> .

- iv. Enter the number of seconds to wait before canceling a transaction and going into offline mode in the **Web Transaction Time Out** field. If unsure what to enter in this field, enter 30 seconds.
- v. If using Active Directory change the Login Type to Active Directory Prompt. Note: ActiveDirectoryPrompt is required for web services clients that use Active Directory for TraCS credentials. The prompt is needed for credentials on web services clients because turning it off creates a security flaw.
- vi. Click the validate button to validate and save the form.
- vii. The next time the officer logs into the field unit, the settings will be updated on the local drive. However, they won't go into effect until the officer closes and restarts TraCS. A successfully connected web services field unit will display an online indicator in the upper right corner:



- viii. Repeat **step 20a** for remaining field units.
 - ix. If the location of the distribution files have changed because you are using a new network share name for the TraCS network folder, copy the distribution files from the new distribution folder (specified in step 20) to the old distribution folder. This will allow officers to run the distribution themselves using the **Run Distribution** button or at log off time even though their computers have not yet been updated to point to the new distribution folder. If the old TraCS server is no longer available, you will have to use the "bat file" method to run the new distribution on each field unit.
 - x. The web services conversion is complete. **Skip step 20b.**
- b. If your agency does not auto-update settings at log on for field units, you must manually configure web services at the field unit. Updating these settings through a distribution is not recommended since it would also convert your

office workstations to web services clients.

At each field unit:

- i. Open `c:\programdata\tracs\settings\Settings.ini` in notepad.
- ii. Change the IO type to 3.

[IO]

Type=3

- iii. If using Active Directory change the Login Type to Active Directory Prompt. **Note:** ActiveDirectoryPrompt is required for web services clients that use Active Directory for TraCS credentials. The prompt is needed for credentials on web services clients because turning it off creates a security flaw.


[User]

LoginType= ActiveDirectoryPrompt

- iv. Change the web services URL to the URL for the TraCSWebServices URL.

[TraCSWebService]

URL=http://mytracsserver.com/TraCSWebServices

- v. Save and close settings.ini.
- vi. Run the `\distribution\mobile\MobileDistribution.bat` file from the TraCS network folder to install the remaining configuration files.
- vii. A successfully connected web services field unit will display an online indicator in the upper right corner:  Online
- viii. Repeat **step 20b** for the remaining field units.
- ix. The web services conversion is complete.

More TraCS FAQs Here:

<http://wisconsindot.gov/Pages/safety/enforcement/agencies/tracs/faqs.aspx>

Js 12/10/2015

Je 09/01/2016

jp 02/28/2017

dr 4/24/2017
